

WHAT IS CLAIMED IS:

- 1     A circuit configured to activate an actuator comprising:  
        a sensor sensing a predetermined physical event to provide a  
5     signal indicative of the event;  
        a controller responsive to the signal inputted from the sensor to  
output actuator activating signals;  
        a plurality of switch drivers responsive to the actuator activating  
signals outputted from the controller to produce switch on-signals,  
10    respectively;  
        a plurality of independent channels each of which connects the  
controller to one of the switch drivers to transmit the actuator  
activating signals from the controller to the switch drivers,  
respectively; and  
15    a plurality of switches designed to be turned on in response to  
the switch on-signals produced by the switch drivers, respectively, the  
switches being so connected in series with each other that when the  
switches are all turned on, an actuator turning on-signal being  
provided to activate the actuator.  
20
- 2     A circuit as claimed in claim 1, wherein the actuator is a squib for  
inflating an airbag mounted on a vehicle.
- 3     A noise-resistant circuit for squibbing a squib mounted on an  
25    object to be moved,  
said circuit comprising:

a sensor sensing a physical quantity applied to the circuit to generate a signal corresponding to the physical quantity;

a controller configured to issue a command for squibbing the squib based on the signal;

5 a plurality of drivers operating in response to the command;

a plurality of independent channels connecting the controller and the plurality of drivers to transmit the command from the controller to the plurality of drivers; and

a plurality of switching elements, mutually connected in series  
10 and driven by the plurality of drivers respectively, to squib the squib.

4 A noise-resistant circuit as claimed in claim 3, wherein each of the plurality of independent channels is a channel operating with a serial transmission system.

15

5 A noise-resistant circuit as claimed in claim 3, wherein the plurality of independent channels comprise a first channel and a second channel, the first channel being connected to a higher voltage side of an electric power line of the squib and the second channel  
20 being connected to a lower voltage side of the electric power line of the squib.

6 A noise-resistant circuit as claimed in claim 5, wherein, at least one of the first channel and the second channel is in charge of  
25 transmitting the command for driving two or more switching elements among the plurality of switching elements.

- 7 An airbag apparatus for safety comprising:  
an airbag inflating in response to a signal;  
a sensor sensing a movement and generating the signal in  
5 response to the movement;  
a controller configured to issue a command for squibbing the  
squib based on the signal;  
a plurality of drivers receiving the command in parallel to each  
other from the controller and operating in response to the received  
10 command; and  
a plurality of switching elements mutually connected in series to  
squib the squib and driven by the plurality of drivers respectively.
- 8 An airbag apparatus for safety comprising:  
15 an airbag inflating in response to a signal;  
a sensor sensing a movement and generating the signal in  
response to the movement;  
a controller configured to issue a command for squibbing the  
squib based on the signal;  
20 a plurality of drivers operating in response to the command;  
a plurality of independent channels connecting the controller  
and the plurality of drivers to transmit the command from the  
controller to the plurality of drivers; and  
a plurality of switching elements, mutually connected in series  
25 and driven by the plurality of drivers respectively, to squib the squib.

9    An airbag apparatus as claimed in claim 8, wherein each of the plurality of independent channels is a channel operating with a serial transmission system.

5    10    An airbag apparatus as claimed in claim 8, wherein the plurality of the independent channels comprise a first channel and a second channel, the first channels being connected to a higher voltage side of an electric power line of the squib and the second channel being connected to a lower voltage side of the electric power line of the  
10    squib.

11    An airbag apparatus for safety as claimed in claim 10, wherein at least one of the first channel and the second channel is in charge of transmitting the command for driving two or more switching elements  
15    among the plurality of switching elements.

12    An airbag apparatus as claimed in claim 7, wherein the airbag is an on-vehicle airbag.

20    13    An airbag apparatus as claimed in claim 7, wherein the airbag is an on-vehicle airbag for an automobile.